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This report discusses a study of a Norwegian six-year-old child's acquisition of English syntax in a second language environment. Interrogative and negative sentences which require periphrasis with "do" are the forms considered in the analysis. Although the formal aim of the study is limited to an effort at discovering more about developmental sequences in second language learning as compared with first language learning, some comments on the study's implications for foreign language teaching methodology are made in conclusion. (JH)

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LANGUAGE ACQUISITION IN A SECOND LANGUAGE ENVIRONMENT

Roar Ravem

L'article raconte comment un enfant norvégien de six ans arrive à la maîtrise de la syntaxe anglaise dans un entourage de langue anglaise. Le but de cette étude est de constater l'ordre d'acquisition de la syntaxe anglaise dans ce cas et de comparer les résultats avec des études récentes sur le langage enfantin.

Les phrases choisies pour l'analyse sont interrogatives et négatives du type qui demande une périphrase avec *do,* ces types étant d'un intérêt particulier puisque le norvégien, dans le premier cas, se sert d'une inversion du sujet et du verbe.

Les résultats de cet article font penser qu'une jeune personne, apprenant une deuxième langue sans subir aucun enseignement systématique, tout comme l'enfant apprenant sa première langue, crée sa grammaire à elle, les règles de laquelle, pourtant, restent sous l'influence de sa compétence dans la langue maternelle.

Ces résultats ne sont pas sans intérêt pour l'enseignement d'une deuxième langue à de jeunes élèves, mais l'auteur préfère ne pas en tirer de conclusion en vue d'une méthode pédagogique pour l'enseignement des langues étrangères.

Der Artikel beschreibt, wie ein norwegisches Kind von sechs Jahren die englische Syntax in englischsprachiger Umgebung erlernt. Ziel dieser Studie ist es, dabei die Reihenfolge des Erwerbs der englischen Syntax festzustellen und die Ergebnisse mit denen neuerer Veröffentlichungen über die Kindersprache zu vergleichen.

Die Sätze, die für die Untersuchung ausgewählt wurden, sind Interrogativ- und Negativsätze des Typs, der eine Umschreibung mit *do* erfordert. Diese Strukturen sind besonders aufschlußreich, da das Norwegische sich im ersten Fall der Inversion von Subjekt und Prädikat bedient.

Die Ergebnisse der Untersuchung lassen vermuten, daß ein Lernender in kindlichem Alter, der keinen systematischen Unterricht in einer Zweitsprache erhält, sondern wie bei dem Erwerb der Erstsprache ungeordneten sprachlichen Daten ausgesetzt ist, die Grammatik der Zweitsprache von selbst in sich aufbaut. Dabei ist ihr Regelsystem von der muttersprachlichen Kompetenz beeinflußt.

Die Ergebnisse dieses Artikels sind für den Fremdsprachenunterricht bei Lernenden im kindlichen Alter nicht ohne Interesse. Doch der Verfasser zieht es vor, keine konkreten Schlüsse für eine Unterrichtsmethodik zu ziehen.

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Introduction

The present paper is a report on a study of a Norwegian six-year-old child's acquisition of English syntax in a second language environment. The study was undertaken with my son as the informant when I was a student of applied linguistics at the University of Edinburgh in 1966. It arose out of a general interest in language acquisition *per se*

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and more particularly out of an interest in relating studies of language acquisition to the teaching of foreign languages in kindergartens and at early elementary school stages. The more we know about language learning the more likely we are to be successful in our teaching of a second language. However, the gap between a child acquiring his first language and a child learning a second language, at a time when he already possesses 'language', is likely to be so big that any direct application of our knowledge is difficult, the more so because our knowledge in the first place is still extremely shaky. I hope that the present study will make a small contribution to filling the gap.

Most recent studies of the acquisition of syntax have been concerned with the linguistic competence of the children at different stages of their linguistic development and an effort has been made to write generative grammars for these stages. The investigators have been interested in the obtained data only to the extent that they throw light on the child's system of internalized rules for generating language. According to the language acquisition model suggested by Noam Chomsky [1]), a distinction is made between 'performance' – the actual utterances – and the underlying 'competence' on which performance is based. Chomsky's basic tenet is the notion that linguistic theory should provide an adequate characterization of the native speaker's knowledge of his language, i.e. the native speaker's intuition of what is grammatical in his language should be capable of being described in a logically consistent way. Even if it were possible, in Chomsky's terms, to give a descriptively adequate account of an adult native speaker's linguistic competence, an adequate description of a child's competence is very much more difficult, both because the child's intuition of what is grammatical is not available and also because the child's competence is continually developing.

In the present study no serious attempt has been made to go beyond capturing the syntactic regularities of my informant's speech at the times of observation. An attempt has been made to present some of these regularities in the form of rewrite rules, but as they are based on what appear to be the most productive patterns as shown by performance data, they do not claim to be generalized rules characterizing my informant's competence. They are at best a reflection of it.

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[1]) N. Chomsky, *Aspects of the Theory of Syntax,* Cambridge, Mass: The M. I. T. Press, 1965, chap. 1.

The sentences singled out for closer scrutiny were interrogative and negative sentences of the kind that in adult language require a *do*-transformation. These are of particular interest because the comparable sentences in Norwegian are made by inversion of subject noun phrase and verb.

Background and Method

My informant, Rune, was 6 1/2 when the study began. He had a rudimentary knowledge of English, acquired during a previous stay in England and from being read to occasionally in English. He had thus been exposed to the language, but had never had any systematic teaching of it. He started school in the middle of January 1966 in Scotland and was allocated to a class of children of his own age-group. Basing one's judgement on a purely subjective impression, one can say that Rune appears to be slightly ahead of his age-group with respect to intelligence and perhaps language development too.

The material was collected from two main sources: free conversation and a translation test. Rune, who is a talkative child, did not seem to be affected by the fact that the conversations were recorded, and thus it was not difficult to elicit utterances from him. With the help of my 11-year-old daughter, who is bilingual in Norwegian and English, we managed to steer the conversation in different directions to elicit from Rune different kinds of sentences, referring to both past, present and future.

The translation test, involving about fifty negative and interrogative sentences requiring an auxiliary in adult speech, was given at regular intervals. The object of the translation experiment was to compare the utterances with the data obtained in free conversation in order to get an indication of the validity of prompted utterances of this kind. The stimulus took the form of a request (in Norwegian) like "go and ask mother if..." or "tell Ranny that...." The indirect sentence provided Rune with less of a clue to the syntactic structure of *his* sentence than a direct sentence would have done; the clue was further reduced by putting the sentence to him in Norwegian (notably in such cases where *do* is used). By prolonging the time gap between the stimulus and Rune's response it was hoped that the effect of the stimulus as a clue would be further reduced. The validity of the translation experiment was supported by the obtained utterances in free conver-

sation. There were some clear cases of interference from Norwegian, but they were of the same kind as found in the conversation material.

The conversation data were collected at four different "Times", starting on 31st December 1965 and finishing on 6th March 1966. The translation test was given within a week of the conversation recordings. It was seen to be an advantage to record intensively at 3–4 week intervals rather than more frequently and less intensively.

Some findings

Only negative and interrogative sentences have been singled out in the study for analysis. However, some examples of declarative sentences were included for comparative purposes. Our special concern was with Rune's acquisition of *do* as a tense-marker. If Katz and Postal are correct, which they probably are, the only meaning of *do* is to be a carrier of tense[2]). Being semantically empty it does not appear as a morpheme in deep structure and the task of the learner of English is to discover the particular function of *do* as a tense carrier. This might help to explain the reason why *do*-transformations constitute a particular difficulty for foreign learners of English. In this respect *do* has not the same status as the modal auxiliaries, which behave, along with *have* and *be,* roughly in the same way as the equivalent auxiliaries in Norwegian. On this basis we would expect that Rune would acquire these auxiliaries more quickly than *do*. The following examples show that this is in fact the case: *I not like that* (C.1)[3]), *eating you dinner to-yesterday?* (T.2), *what you did in Rothbury?* (C.3), *climb you?* (C.2) compared with *can I give that to Sooty?* (C.1), *oh, I mustn't take that aeroplane open and...* (C.1), *I have try that, "men"* [4]) *I can't do it* (C.1).

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[2]) J. J. Katz & P. M. Postal, *An Integrated Theory of Linguistic Descriptions,* Cambridge, Mass: The M. I. T. Press, 1964, p. 8.

[3]) C refers to Conversation data, T refers to Translation. The number refers to Time of recording.

[4]) Norwegian for *but.* Rune made use of Norwegian vocabulary items frequently and without hesitation, as if they were available English words. One interesting observation is that he, even at Time 1, before he knew any written English (or Norwegian), the Norwegian words were often given an English pronunciation. Somehow he was able to translate from one phonological system into another. Examples are: *tak* / tɑ:k / (roof), pronounced by Rune as / teik /; ratt / rɑt / (steering wheel) pronounced as / ræt /.

1. Declarative sentences.

The following typical declarative sentences have been included for comparative purposes:

(i) All crying.
We climbing Friday.
I drawing and do something.
I fall down again (i.e. prob. *fell*).

(ii) He can see the moon.
I will hear what you will say.

(iii) I have say it.
I have lost it.
I have eating and play.

On the basis of data of the kind represented by (i) above we would suggest, very tentatively, the following rule:

$$S \rightarrow NP + \left\{ \begin{matrix} (be) + V \\ V \end{matrix} \right\} + (X) + (adv.t.)$$

Both modals and *have* have been excluded. Rune uses *have* for 'completed' aspect, but the participle morpheme, *-en,* is not normally realized. The only available verb-forms at this stage are, on the whole, verb-stem (V) or V_{ing}. That *V* and V_{ing} are not free variants, except possibly in (i) above, is indicated by the almost exclusive use of *V* in sentences with modal auxiliaries. The following obtained sentences uttered in succession illustrate this:
I singing out yesterday.
I can sing Blaydon Races for you.

We can only venture a guess why Rune makes such an extensive use of the *ing*-Form of the main verb, more often than not without the auxiliary *be.* Is it because he has been exposed to English at an early stage so frequently in situations where the present progressive is used that he has generalized his own usage on this basis? An interference from Norwegian is out of the question as Norwegian has no expanded tense form.

The concept of tense is available to Rune, but he appears not to have discovered how to realize it in English. Time relations are sometimes expressed by help of an adverb of time as in the obtained sentences *I singing now/yesterday/all the day* (i.e. every day). The non-

occurrence of *-ing* with such verbs as *like* and *think* and the fact that *be* occurs optionally only in the context of V_{ing}, not *V*, might indicate a beginning differentiation between the simple and progressive forms.

2. Negative Sentences

In adult grammar *do* is used when the verb phrase does not contain another auxiliary verb. As with the modal auxiliaries the negative element, *not,* follows or is attached to *do* and not to V. The sentences below exemplify the similarities between the use of modal auxiliaries and *do* in negative sentences in English as contrasted with Norwegian:

I cannot come.	Jeg kan ikke komme.
I could not come.	Jeg kunne ikke komme.
He does not work.	Han arbeider ikke (he works not).
We did not take it.	Vi tok det ikke (we took it not).

Since *do* is not yet available at Time 1, one prediction would be that Rune, in keeping with Norwegian structure, lets *not* follow the main verb and produces sentences of the form *NP + VP + not.* What we find, however, are such sentences as *I not like that, one is not crying, I not looking for edge.* The negative sentences at this stage correspond to the pattern for declarative sentences. We need only insert *not* after the subject NP in our formula.

3. Interrogative Sentences

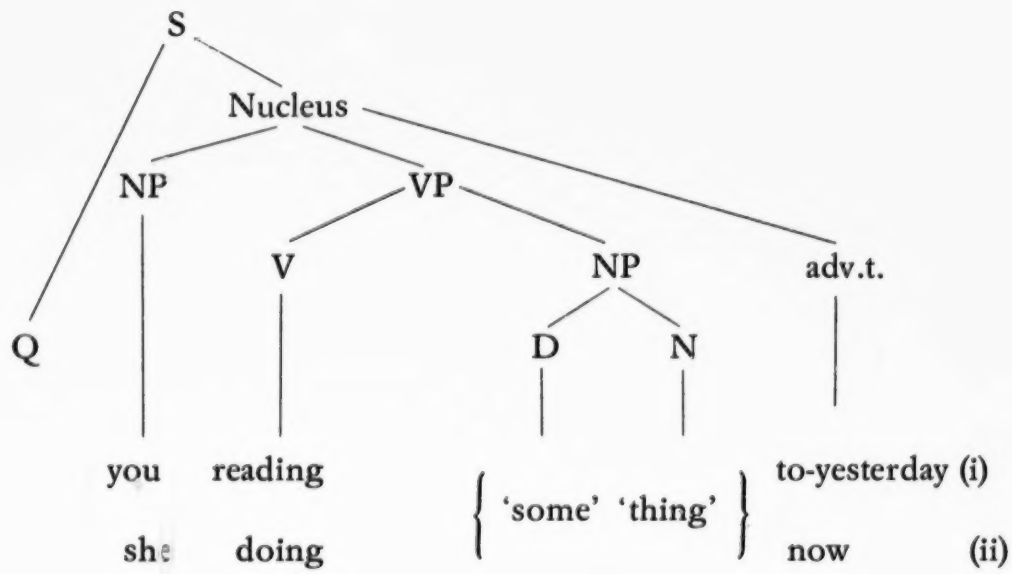
The following types of interrogative sentences, all of them requiring *do* in adult grammar, were studied: (i) sentences beginning with a question word (*what, when,* etc.), (ii) sentences requiring *yes* or *no* as an answer, (iii) negative versions of (ii), (iv) negative questions beginning with *why.*

Again we find a high degree of syntactic similarity between English and Norwegian in the use of modal auxiliaries and *have* ("ha"), but there is no equivalent to *do* as shown by the following examples:

(i) What did he say?	*Hva sa han?*
	(What said he?)
(ii) Did you do it?	*Gjorde du det?*
	(Did you it?)
(iii) Don't you like ice-cream?	*Liker du ikke iskrem?*
	(Like you not ice-cream?)
(iv) Why don't you like ice-cream?	*Hvorfor liker du ikke iskrem?*
	(Why like you not ice-cream?)

A reasonable prediction would be that Rune at Time 1 would make use of Norwegian syntactic structure to form English sentences of the types in brackets above, i.e. by inversion of subject NP and V. If *do* is semantically empty, these sentences differ from-adult grammar only in their transformational history. They would sound foreign, but would be perfectly understandable.

As we shall see later this happens to both affirmative and negative versions of *Q-yes/no*-sentences, but interestingly enough not to *Q-wh*-sentences. These seem to be generated on the basis of the rule for declarative sentences with a prefixed *Q-wh* morpheme. If we take the sentence (i) *What you reading to-yesterday?* (T.1) to represent a simple tense sentence and (ii) *What she (is) doing now?* (C.1) to represent progressive tense, they both retain the word order *NP + V* of declarative sentences.[5]) Both sentence types then appear to have developed from the same basic pattern, that of declarative sentences. We could illustrate this hypothesis by help of the following structural description.



On the basis of this pattern we could make various predictions about the line of development for (i) and (ii).

That Rune, like L 1 learners, makes use of the pattern of the declarative sentence in *Q-wh*-sentences is, as we have already pointed

[5]) The only justification for letting (i) represent a simple tense sentence is the fact that this and similar sentences in the translation test later develop into simple past tense sentences of adult grammar.

out, rather surprising in view of the inversion of subject NP and V in Norwegian. It would be reasonable to expect both (i) and (ii) to come out as *What reading you to-yesterday?* and *What doing you now?*. This happens with *yes/no*-questions, where typical examples are *Climb you?* and *Like you food?*. Again we could speculate as to whether Rune in these types of sentence makes use of inversion as a question signal from lack of a question word. Negative *yes/no*-questions and negative *why*-questions are structured differently, but on a par with the respective affirmative sentences. These sentences were included in the Translation test only at Time 3. The *Q-why-Neg*-sentences proved much more resistent to the *do*-transformation than the other types of sentence included in the study. Typical sentences before the introduction of the *do*-transformations are:

I singing out yesterday.
I not sitting on my chair.
What you reading to-yesterday?
Why we not live in Scotland?
Drive you car to-yesterday?
Like you me not, Reidun?

4. The Development of *do* as a Tense Marker

Do occurs from the beginning frequently in the context of a few isolated verbs, where it is probably a lexical variant of *not,* e. g. *I don't know, I don't think, it doesn't matter.* It is probably with this meaning that it has spread by analogy to *I don't will more, I don't talking to you* and *I don't say something more.* It appears also at Time 2 in the elliptical sentence *Do you?,* a case incidentally where Norwegian has a similar construction. I think we can safely say that the auxiliary *do* is absent from Rune's speech at this stage.

The next occurrence of *do* is found at Time 2 in the context of *you,* most likely as a variant of *you,* pronounced [dju:]. Unfortunately the translation test for Time 2 was not recorded and it can therefore not be checked for pronunciation. However, the conversation data for Time 2 have been carefully checked and all eight occurrences were pronounced [dju:]. When *What d'you like?* was asked to be repeated slowly, Rune repeated it as *'What 'you 'like.* It is not unthinkable that *do* is acquired by children by first being a variant of *you.*

Time 3 is a transition stage. *Do* is clearly emerging as a tense carrier. The fact that Rune is now in the middle of a process of acquiring *do* is likely to be responsible for the greater lack of stability found at this stage than at the other times of observation. It is as if

Rune is searching for a morpheme to attach tense to. The following examples illustrate the vacillation:
I not sitting on the chair.
I don't sit on the chair.
What d'you do to-yesterday?
What d'you did to-yesterday?
When d'you went there?
What you did in Rothbury?
What you do – in the hayshed?
Like you ice-cream?
Did you drive car to-yesterday?

By Time 4 *do* has clearly emerged as a separate element, with both a present and past tense form. *Did* is more often than not used in sentences requiring the past tense, but there are also examples which show that the distinction is not fully established. Where *do* occurs it is almost invariably followed by the infinitive form of the main verb.

Contrary to the findings of Susan M. Ervin[6]), there does not appear to be any significant time lag between the introduction of *do* into negative and interrogative sentences in Rune's case. This might be accounted for, however, by Rune's greater linguistic maturity and faster rate of learning.

At this stage *yes/no*-questions, both negative and affirmative, also fall into line with *Q-wh*-sentences as shown by the following examples: *Did you not see on T. V. to-yesterday?* as compared with the Time 3 *See you not on T. V. to-yesterday?* and *Did you not say it to daddy?, Don't you like me, Reidun?* as compared with the Time 3 *Say it you not to daddy?, Like you me not, Reidun?*. Except for the *Q-why-Neg*-sentences, which throughout the time of study have consistently been of the type *why + NP + not + VP* (or alternatively *why + not + NP + VP*), the other structures under study should at Time 4 be capable of being described by a single set of related rules, as is the case in adult grammar [7]). These are by no

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6) S. M. Ervin, "Imitation and Structural Change in Children's Language." In Lenneberg, E. H. (Ed.), *New Directions in the Study of Language.* Cambridge, Mass: The M. I. T. Press, 1964, p. 184.

7) To find out what had happened to *Q-why-neg*-sentences after the termination of the study, Rune was asked (January '67) to translate some of these from Norwegian. In addition to some earlier structures, such as *Why not Ranny come home?,* most of them were in the main in keeping with adult grammar, e. g. *Why do we not live in Oslo?, Why doesn't we go to Oslo?.* But also the obtained *Why didn't mammy don't make dinner?* was attested by Rune as correct.

means as stable as in adult grammar. Rune still frequently produces sentences which syntactically correspond to earlier structures.

Conclusion

The study reported here was not undertaken to test any particular hypotheses relating to certain theories of language learning. The only purpose was to conduct a study within the framework of recent L 1 syntax studies to find out something about developmental sequence as compared with first language learners.

Recent first language syntax studies have shown that children exposed to a language at an early age internalize rules by help of which they are able to generate sentences. Attempts have been made with some degree of success to give a characterization of the sets of rules that are operative at various stages of development. The studies have shown that a large measure of creativity enters into the process of language acquisition.

The situation of the learner of a second language is clearly different from that of the L 1 child. The most obvious difference is that the task of the foreign learner is not to learn 'language', which he already possesses and the knowledge of which must affect his acquisition of a second language. The process of learning the second language might therefore conceivably be qualitatively different. Nor is he very often exposed to 'primary linguistic data' in the sense that an L 1 learner is, but rather to carefully graded language items presented in small doses for a few hours a week.

The present study has, I believe, shown what we would expect to find, namely that a normal six-year-old child at all levels of language is greatly facilitated by the linguistic competence he already possesses through his first language. The six-year-old's greater maturity makes for a faster rate of learning. The first language, especially when it is as closely related to English as Norwegian is, is a source the learner can draw on. The detrimental effect of first language interference can only be assessed properly after the learner has achieved a good command of the second language.

What is perhaps more striking is the extent to which second language acquisition in an environment where no formal instruction is given seems to be a creative process not unlike that of first language acquisition. The similarities between Rune and L 1 learners in the

developmental sequence of negative and interrogative sentences are in many ways more revealing than the differences.

It does not follow from this that the appropriate methodology for teaching a foreign language at an early stage is to expose the children to a 'language bath' and let them develop for themselves internalized generative rules which ultimately develop into those of adult grammar. We do not know if second language acquisition can be speeded up by the children being exposed to selected and linguistically graded language patterns. And even if we have accepted that language learning is not merely a question of habit formation and reinforcement of correct responses, we cannot exclude the possible transfer value of well-established basic sentence patterns, especially if they are acquired in contextualized situations.

Perhaps a larger measure of language exposure and a freer scope for creative and self-corrective language learning than permitted by a graded course would be appropriate in early foreign language teaching in a school setting. Only a series of carefully controlled experiments could provide an answer to this question.

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